



Utah Water Conditions Monitoring (Drought Webinar)

The meeting will begin shortly



Thank you to our contributors

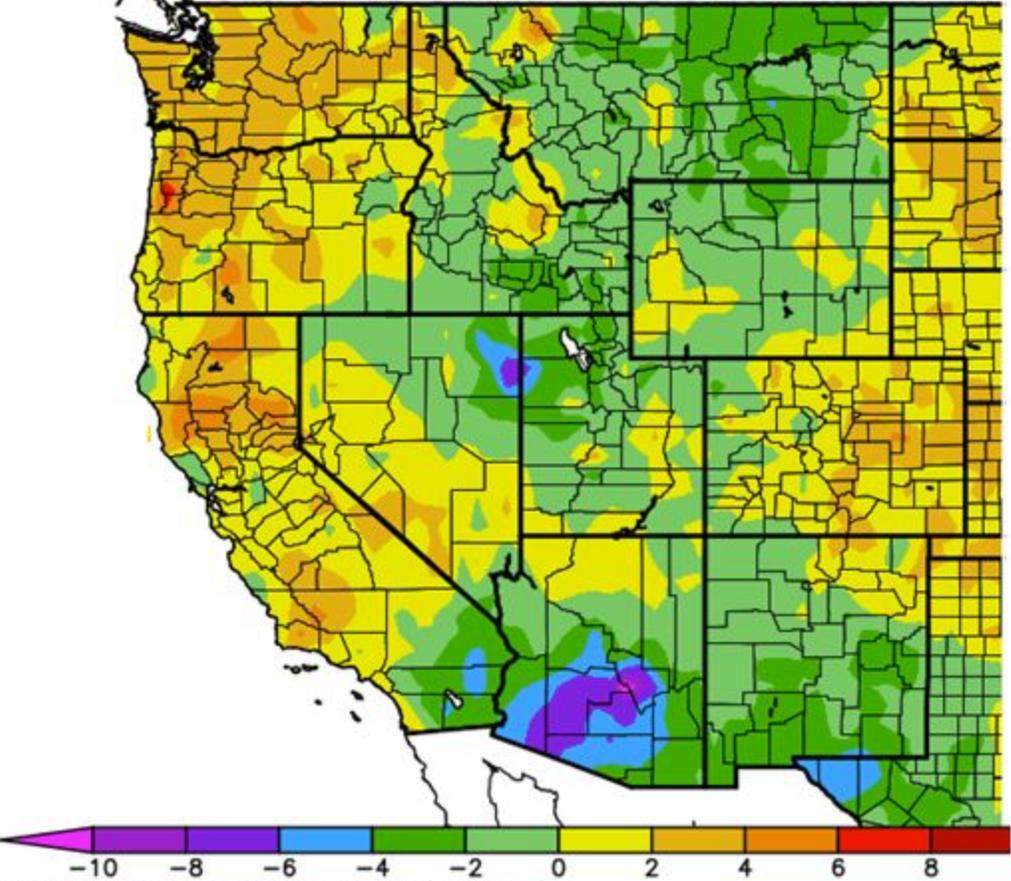


Utah Drought Monitor Webinar

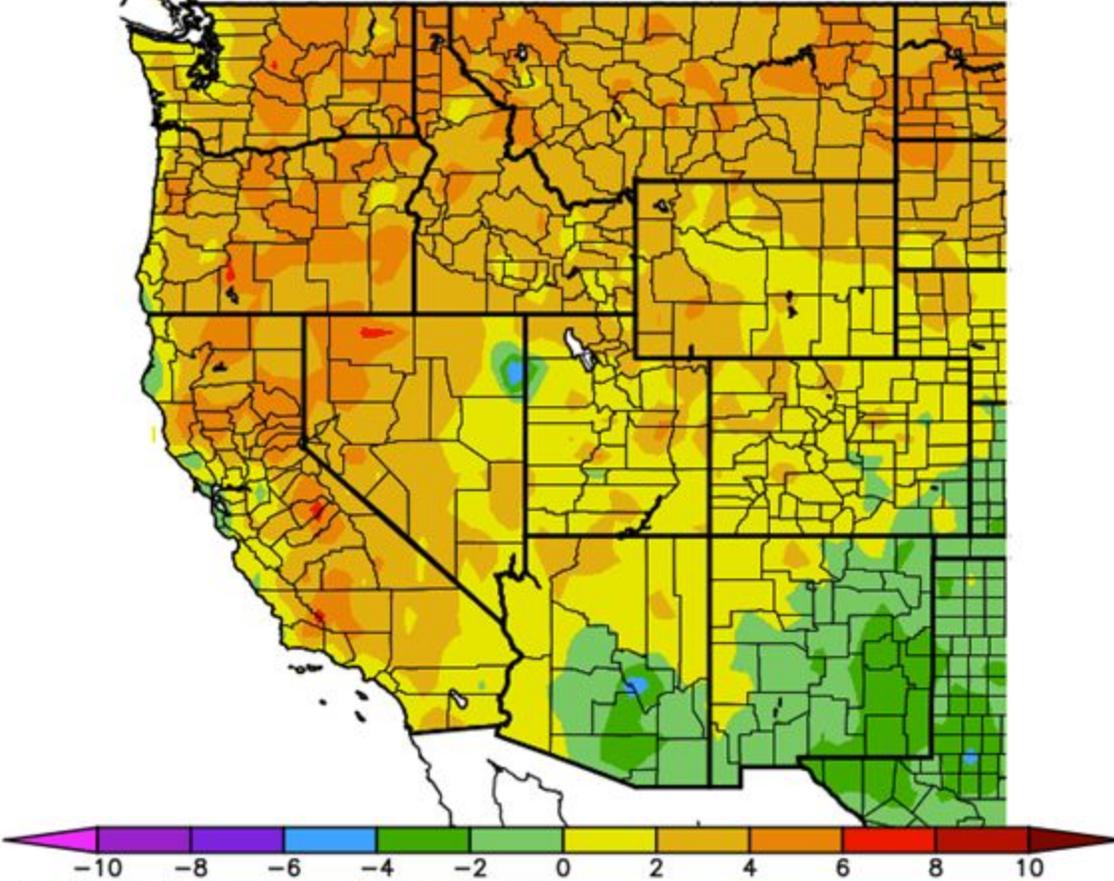
August 24, 2021

Temperatures (left: 2-week; right: since July 1)

Ave. Temperature dep from Ave (deg F)
8/10/2021 - 8/23/2021



Ave. Temperature dep from Ave (deg F)
7/1/2021 - 8/23/2021

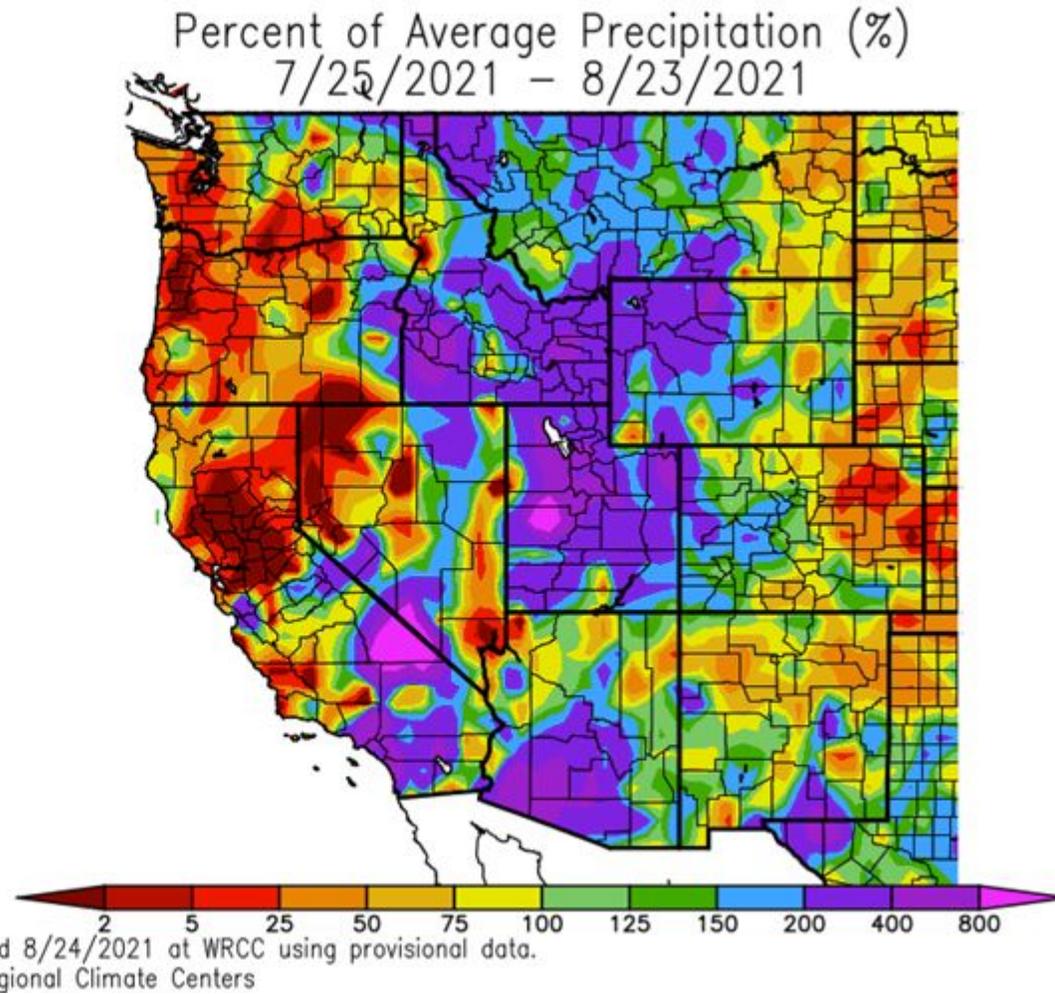
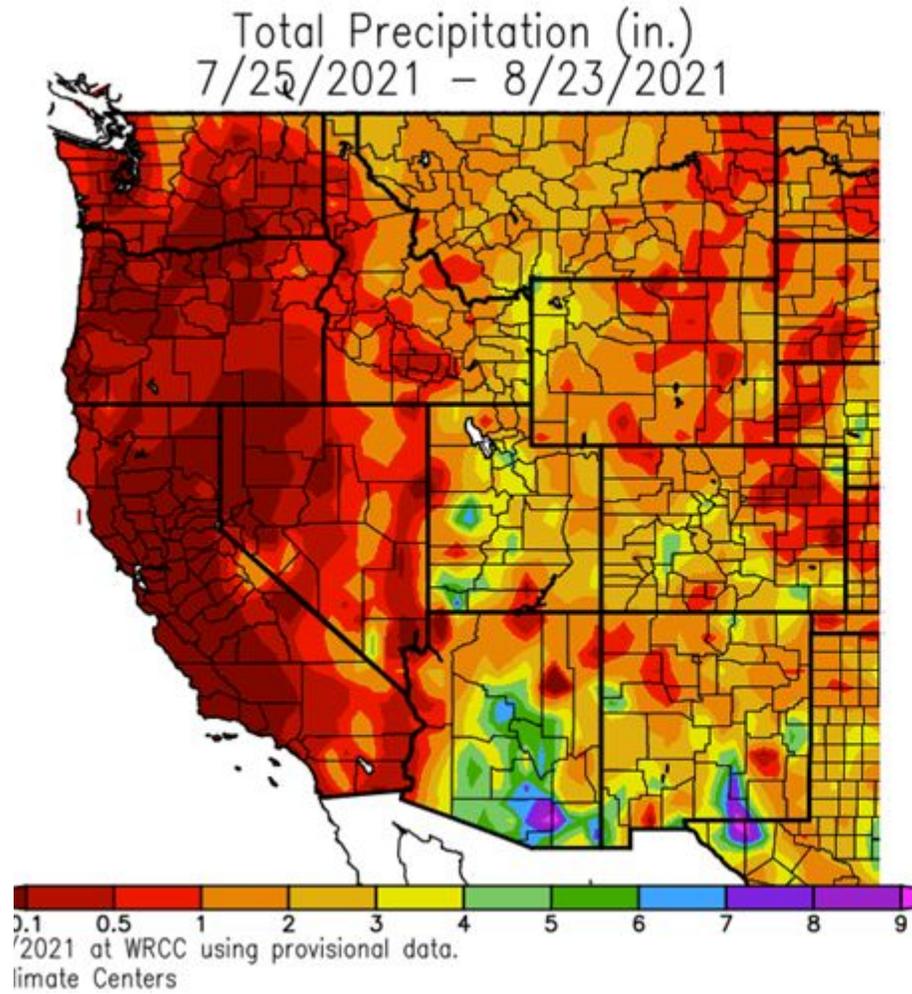


Generated 8/24/2021 at WRCC using provisional data.
NOAA Regional Climate Centers

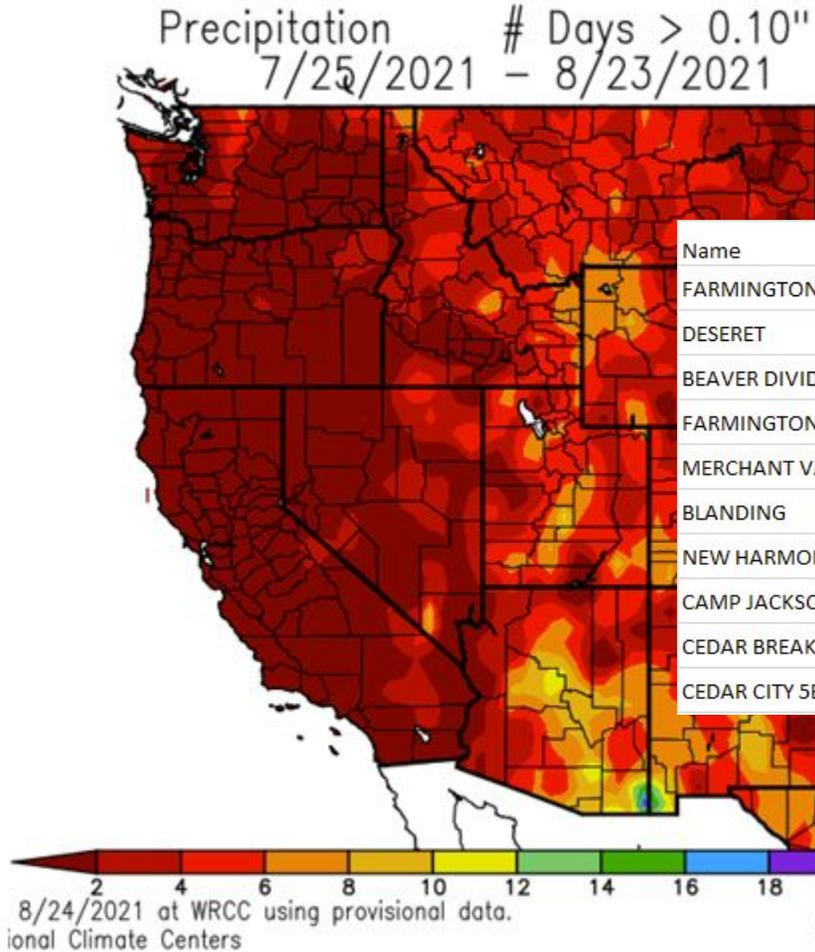
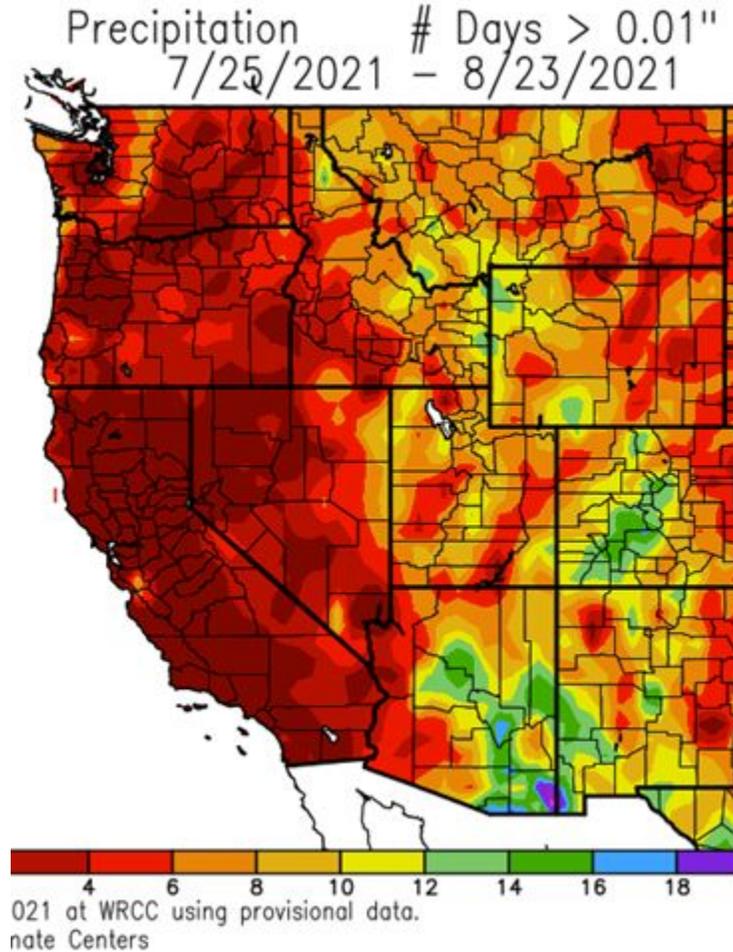
Generated 8/24/2021 at WRCC using provisional data.
NOAA Regional Climate Centers

Agency - Utah Climate Center
Presenter - Jon Meyer

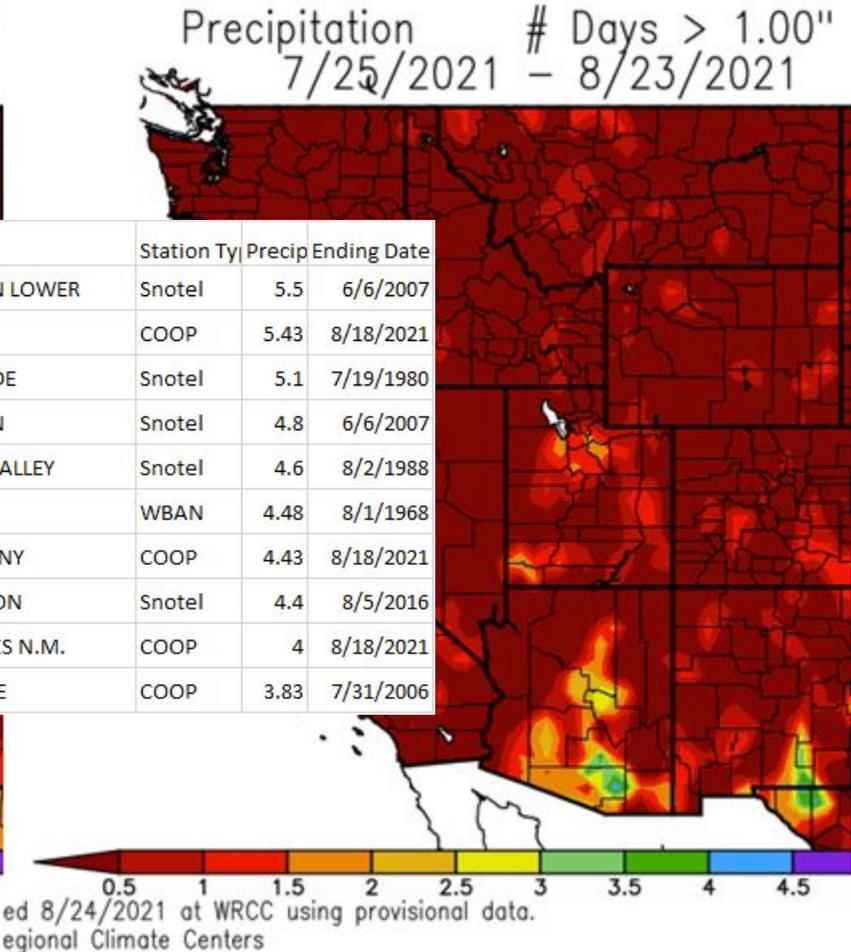
30-day precipitation



30-day Precipitation Intensity

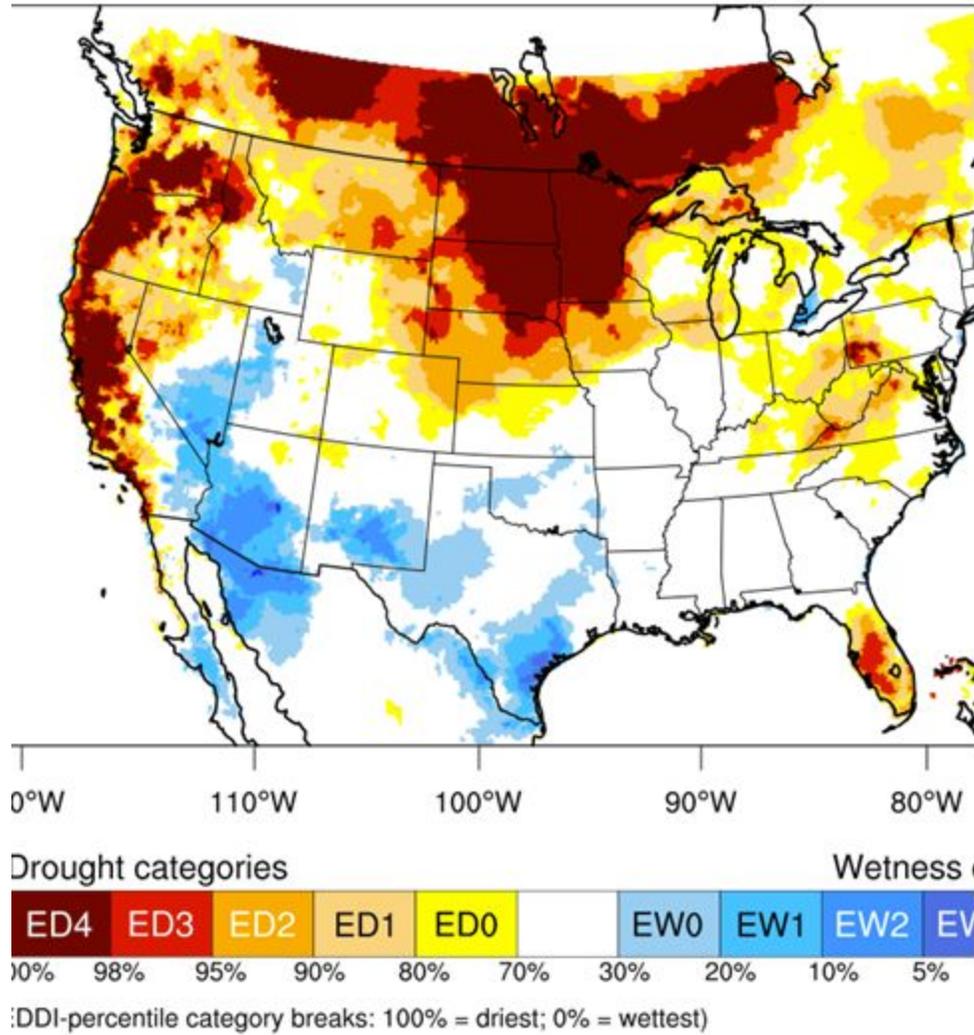


Name	Station Ty	Precip	Ending Date
FARMINGTON LOWER	Snotel	5.5	6/6/2007
DESERET	COOP	5.43	8/18/2021
BEAVER DIVIDE	Snotel	5.1	7/19/1980
FARMINGTON	Snotel	4.8	6/6/2007
MERCHANT VALLEY	Snotel	4.6	8/2/1988
BLANDING	WBAN	4.48	8/1/1968
NEW HARMONY	COOP	4.43	8/18/2021
CAMP JACKSON	Snotel	4.4	8/5/2016
CEDAR BREAKS N.M.	COOP	4	8/18/2021
CEDAR CITY 5E	COOP	3.83	7/31/2006



Evaporative Demand and Stress

1-month EDDI categories for August 19, 2021

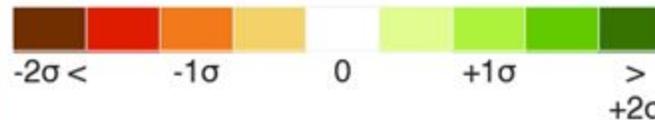


U.S. Vegetation and Drought

[Evaporative Stress Index](#) [VegDRI](#) [Vegetation Health Index](#)

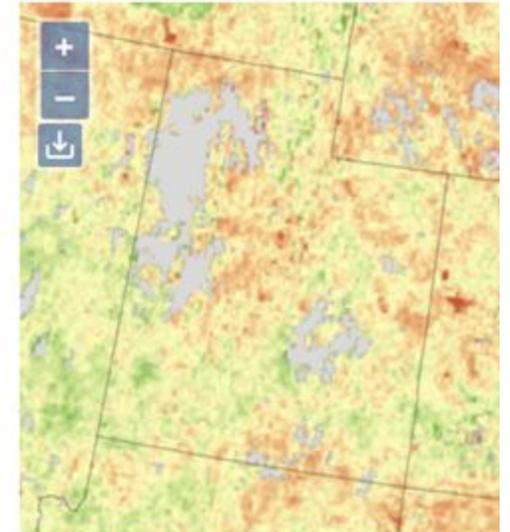
The Evaporative Stress Index (ESI) describes temporal anomalies in evapotranspiration (ET), highlighting areas with anomalously high or low rates of water use across the land surface. The ESI also demonstrates capability for capturing early signals of "flash drought," brought on by extended periods of hot, dry, and windy conditions leading to rapid soil moisture depletion. [Learn more.](#)

Standardized ET/PET Anomalies

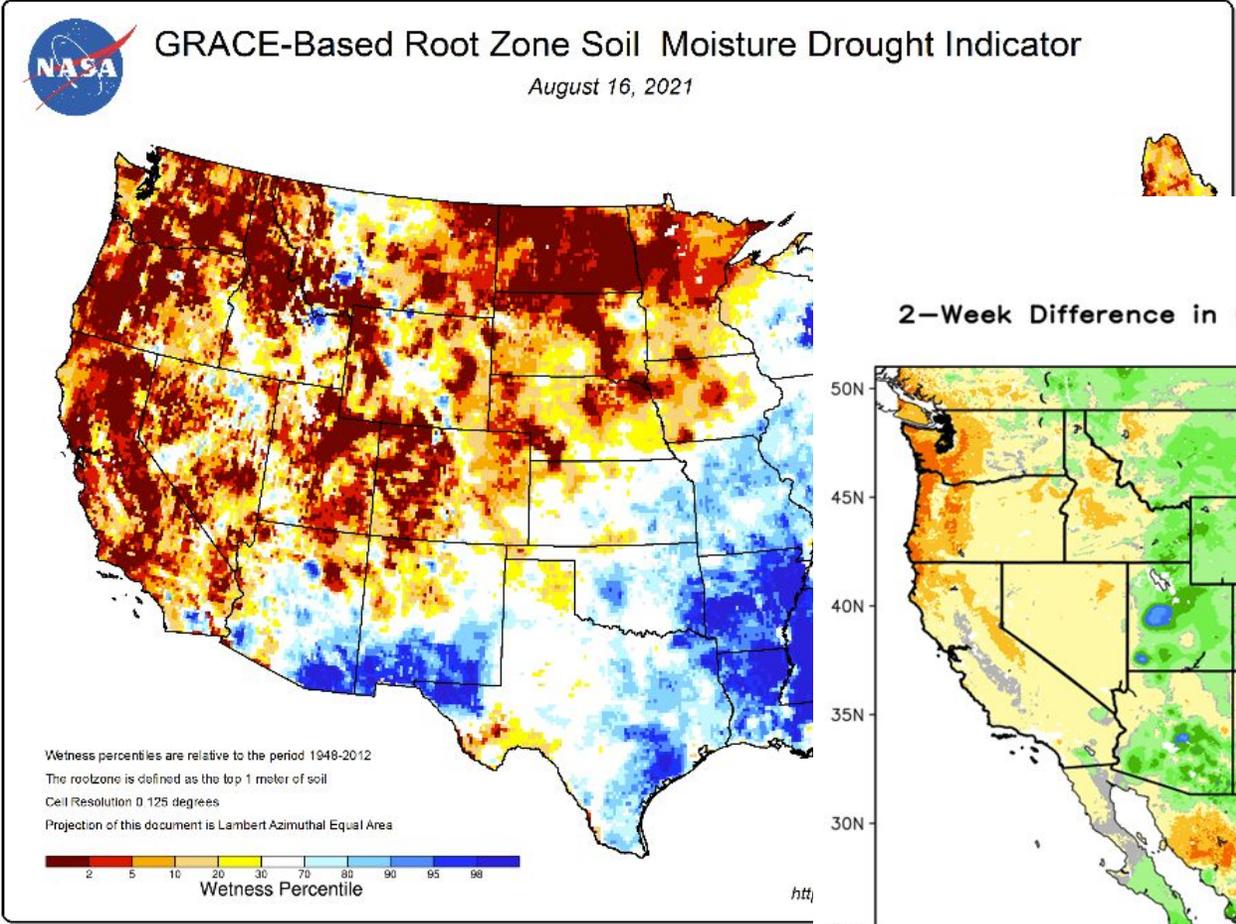


*Currently, data are only available for the contiguous U.S.

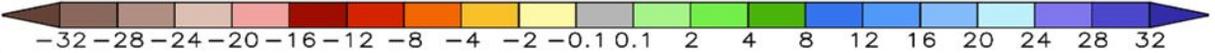
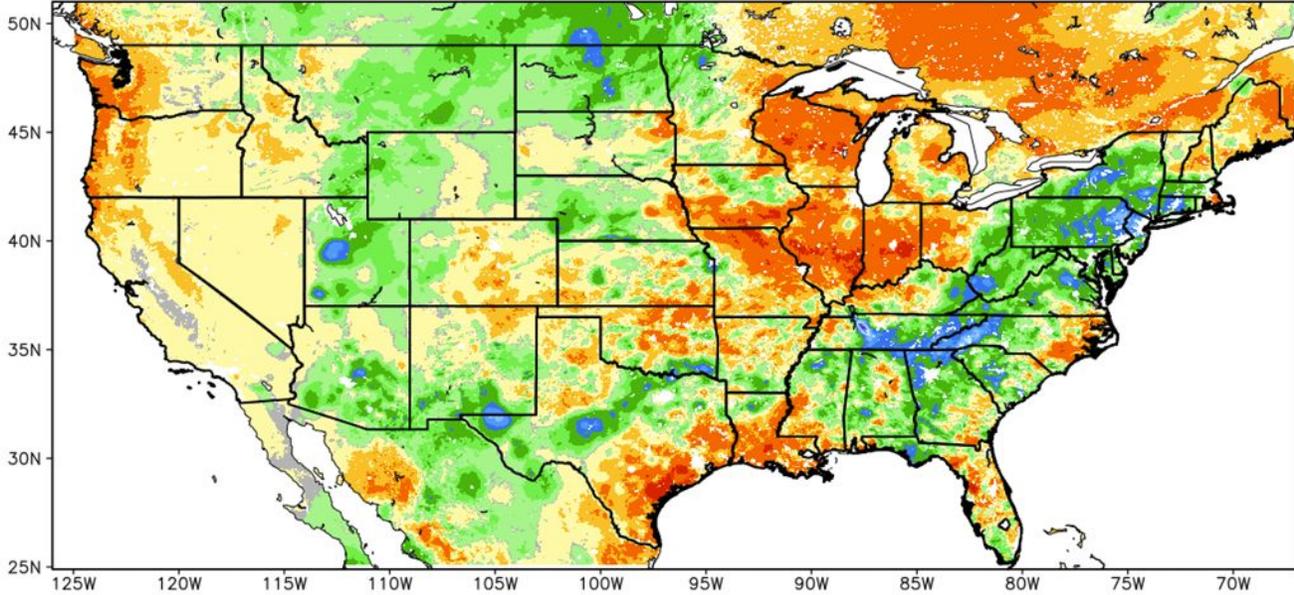
Source(s): [NASA SERVIR](#)



Soil Moisture Conditions



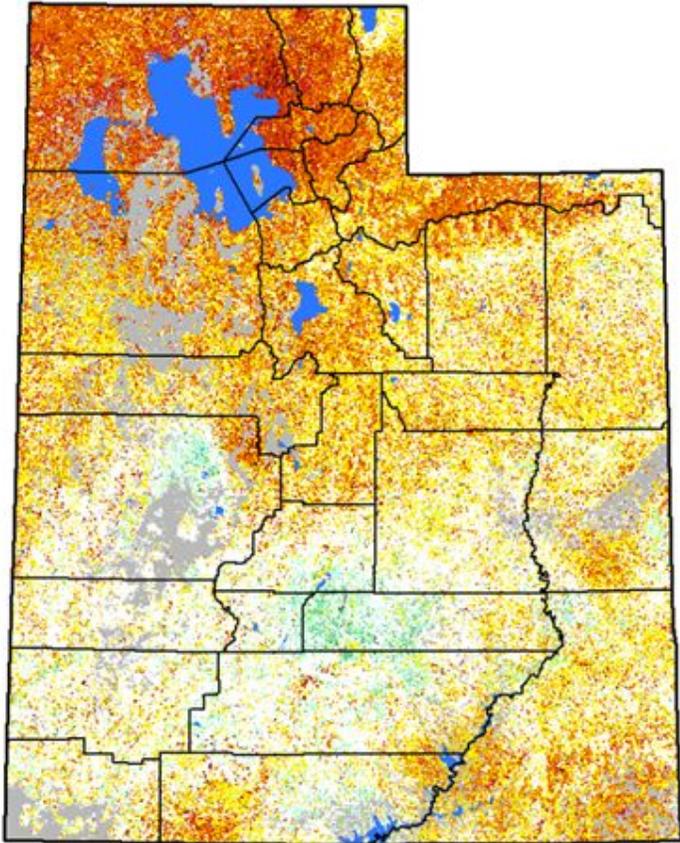
2-Week Difference in Column Relative Soil Moisture (%) valid 00z 24 Aug 2021



NOTE
 Experimental

Vegetation Drought Metrics (VegDRI & VHI)

Map for August 22, 2021



Vegetation Condition

- Extreme Drought
- Severe Drought
- Moderate Drought
- Pre-drought stress
- Near Normal
- Unusually Moist
- Very Moist
- Extremely Moist
- Out of Season
- Water
- Other Landcover

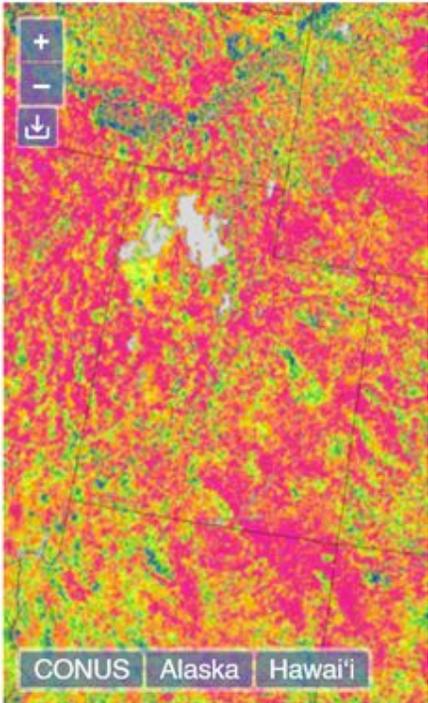
Evaporative Stress Index VegDRI Vegetation Health Index

NOAA's Center for Satellite Applications and Research produces satellite-based global vegetation health products, including the vegetation health index (VHI). VHI is a proxy characterizing vegetation health or a combined estimation of moisture and thermal conditions. Vegetation health is often used to estimate crop condition and anticipated yield. If the indices are below 40, indicating different levels of vegetation stress, losses of crop and pasture production might be expected; if the indices above 60 (favorable conditions), plentiful production might be expected. [Learn more.](#)

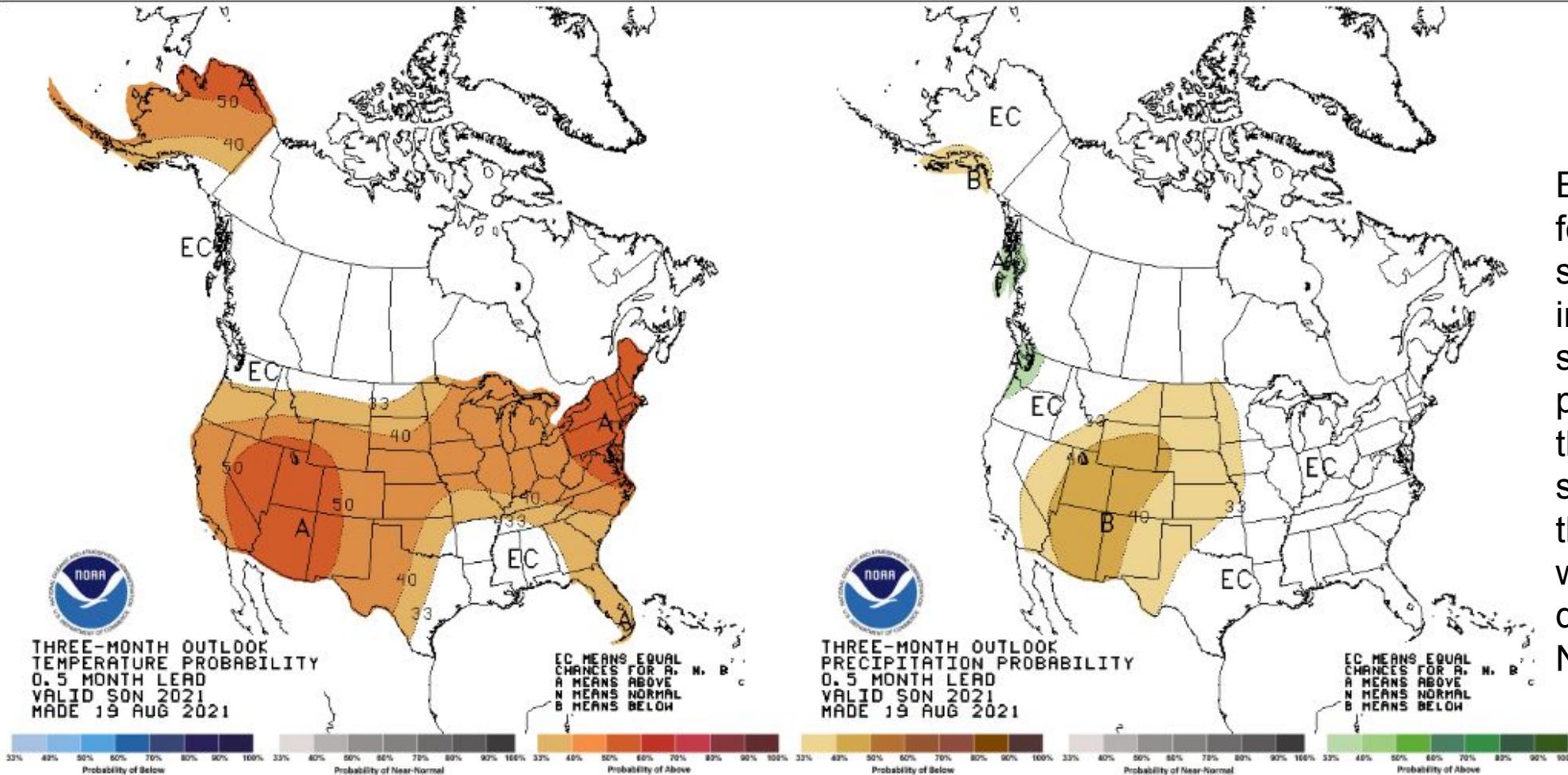
Unfavorable Conditions



Favorable Conditions



CPC 3-month Outlook



ENSO-neutral is favored for the remainder of summer (~60% chance in the July-September season), with La Niña possibly emerging during the August-October season and lasting through the 2021-22 winter (~70% chance during November-January).*

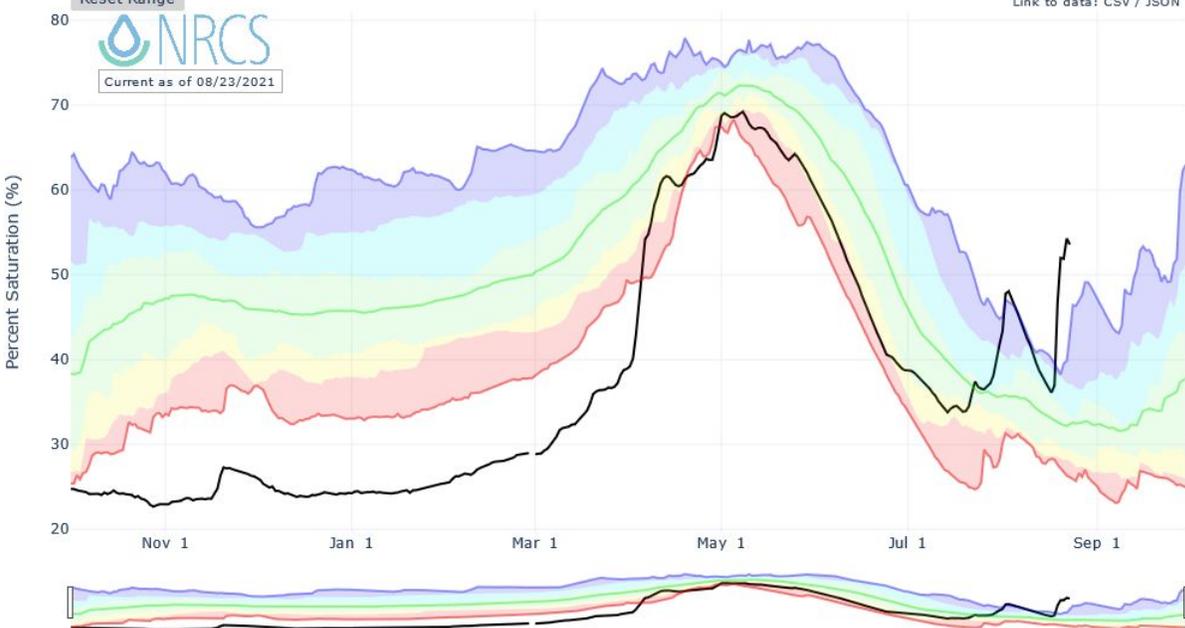
Soil Moisture

DEPTH AVERAGED SOIL SATURATION IN STATE OF UTAH



Link to data: CSV / JSON

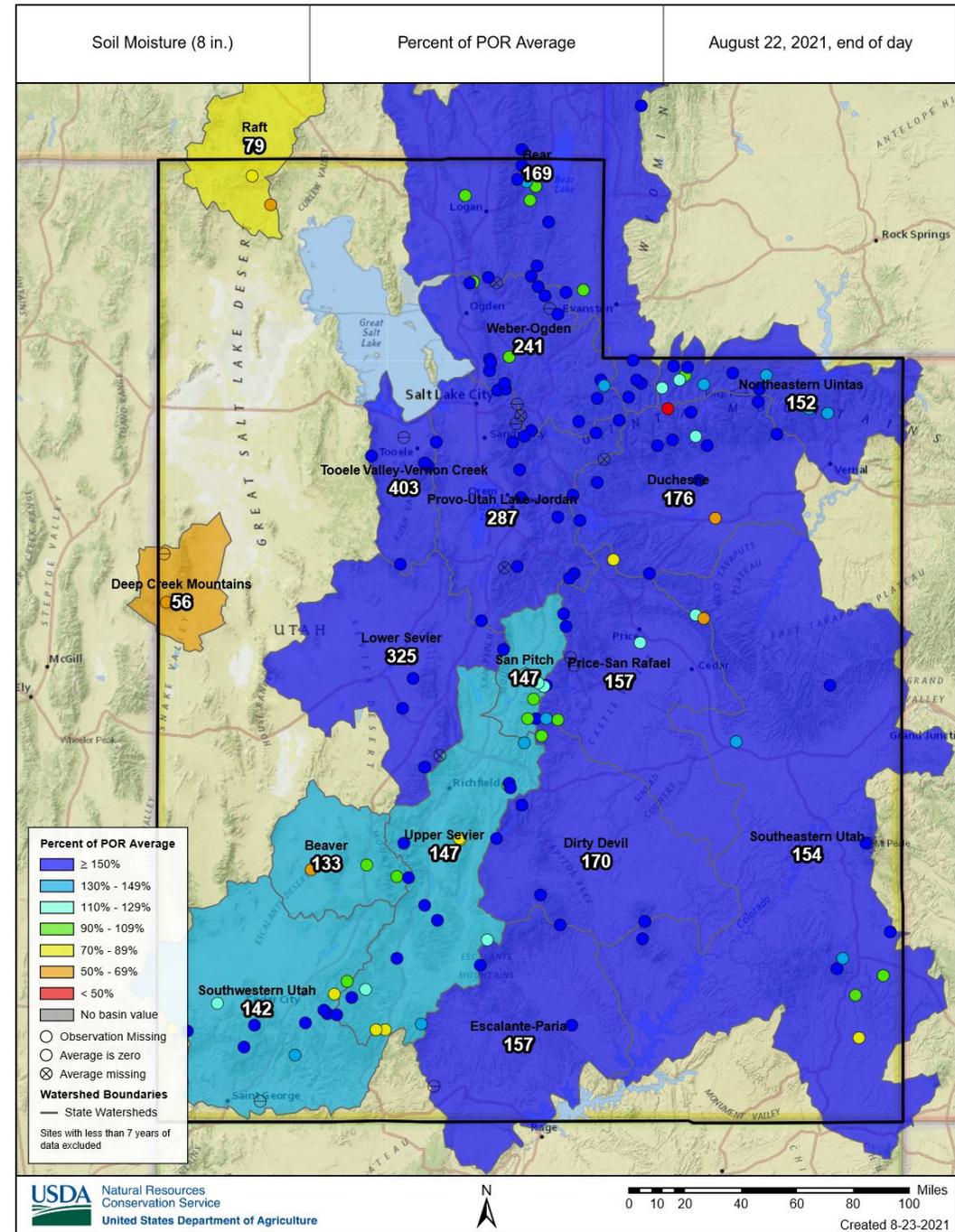
- Station List
- Max
 - Average (POR)
 - Min
 - Stats. Shading
 - 2021 (161 sites)
 - 2020 (161 sites)
 - 2019 (161 sites)
 - 2018 (161 sites)
 - 2017 (161 sites)
 - 2016 (158 sites)
 - 2015 (158 sites)
 - 2014 (155 sites)
 - 2013 (152 sites)
 - 2012 (136 sites)
 - 2011 (131 sites)
 - 2010 (115 sites)
 - 2009 (107 sites)
 - 2008 (106 sites)
 - 2007 (89 sites)
 - 2006 (82 sites)



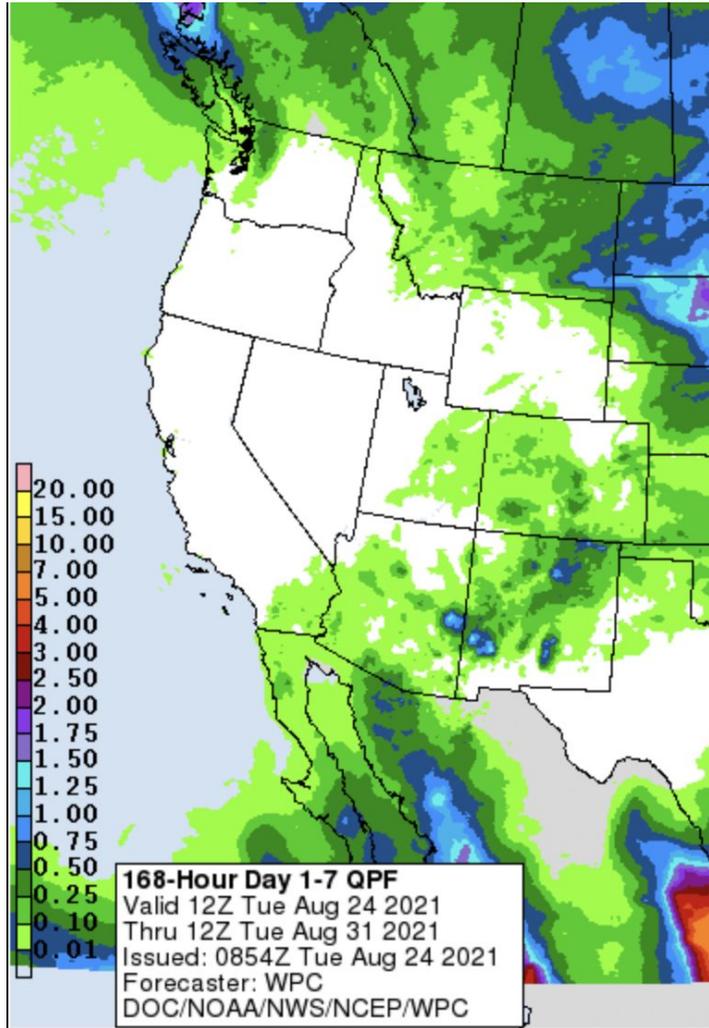
Statistical shading breaks at 10th, 30th, 50th, 70th, and 90th Percentiles. For more information visit: 30 year normals calculation description.

**Nice response to recent monsoonal moisture!
(SNOTEL & SCAN sites, 8" sensor depth)**

Agency - NRCS Snow Survey
Presenter - Jordan Clayton



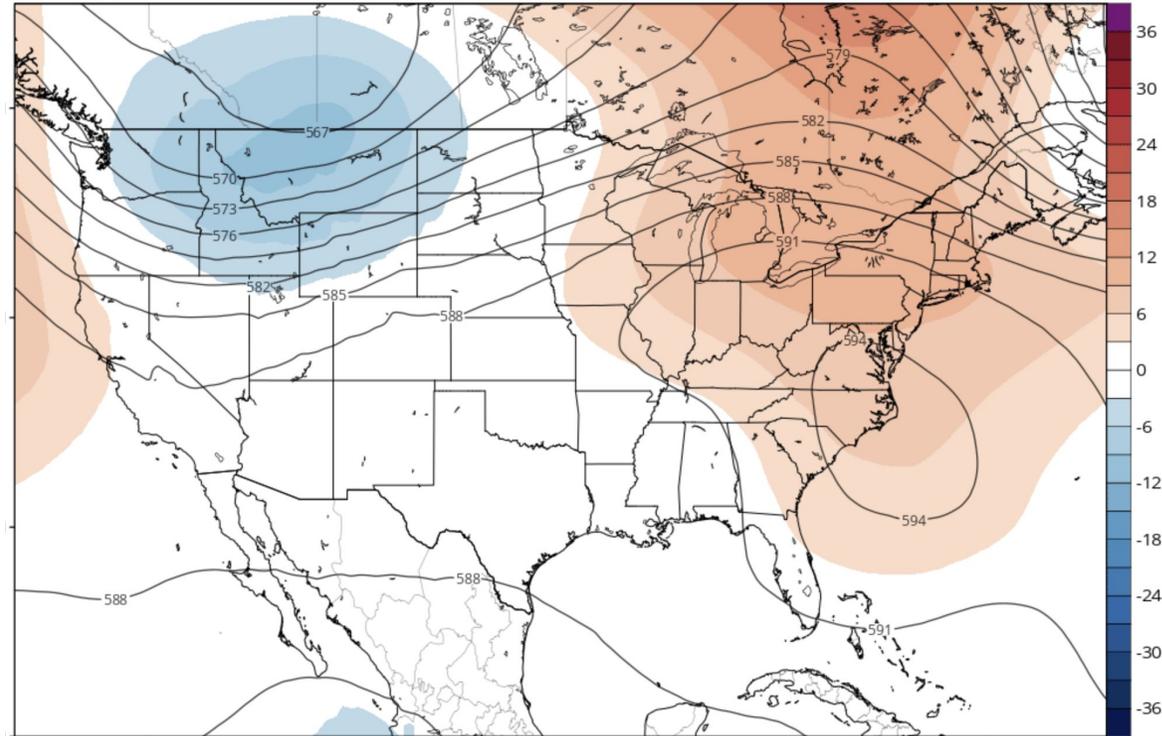
Weather Forecast Office Utah Day 1-7 Outlook



GEFS 500mb Geopotential Height & Anomaly (dam) (based on CFSR 1981-2010 Climatology)

Init: 06z Aug 24 2021 Forecast Hour: [90] valid at 00z Sat, Aug 28 2021

TROPICALTIDBITS.COM

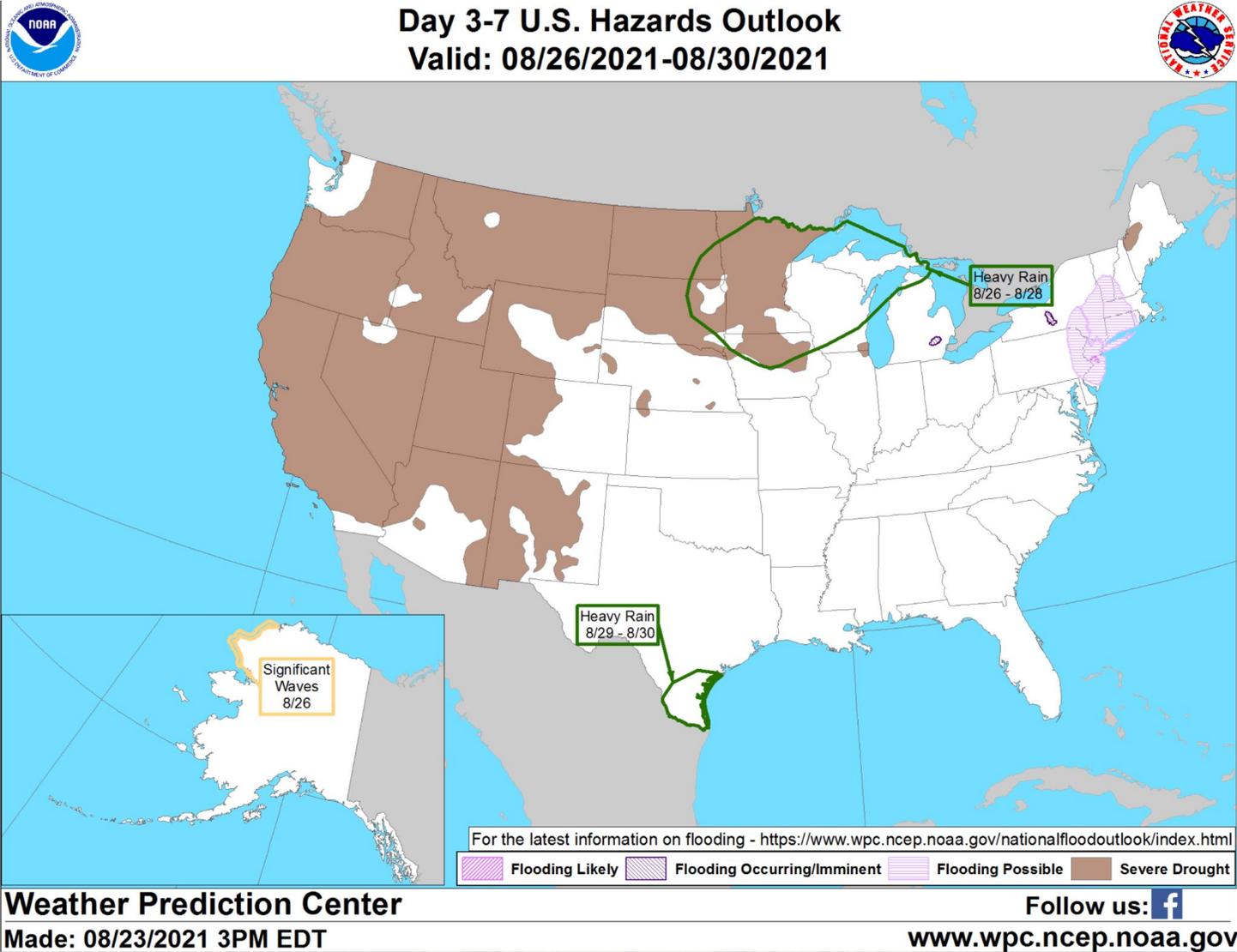


- Largely dry west-southwest flow aloft - September “ish” pattern.
- Min RH trends - teens% in the valleys, 20-30% mountains.
- Breezy southerly winds.
- Near to slightly above climo temperatures.

Agency - National Weather Service Weather Forecast Office

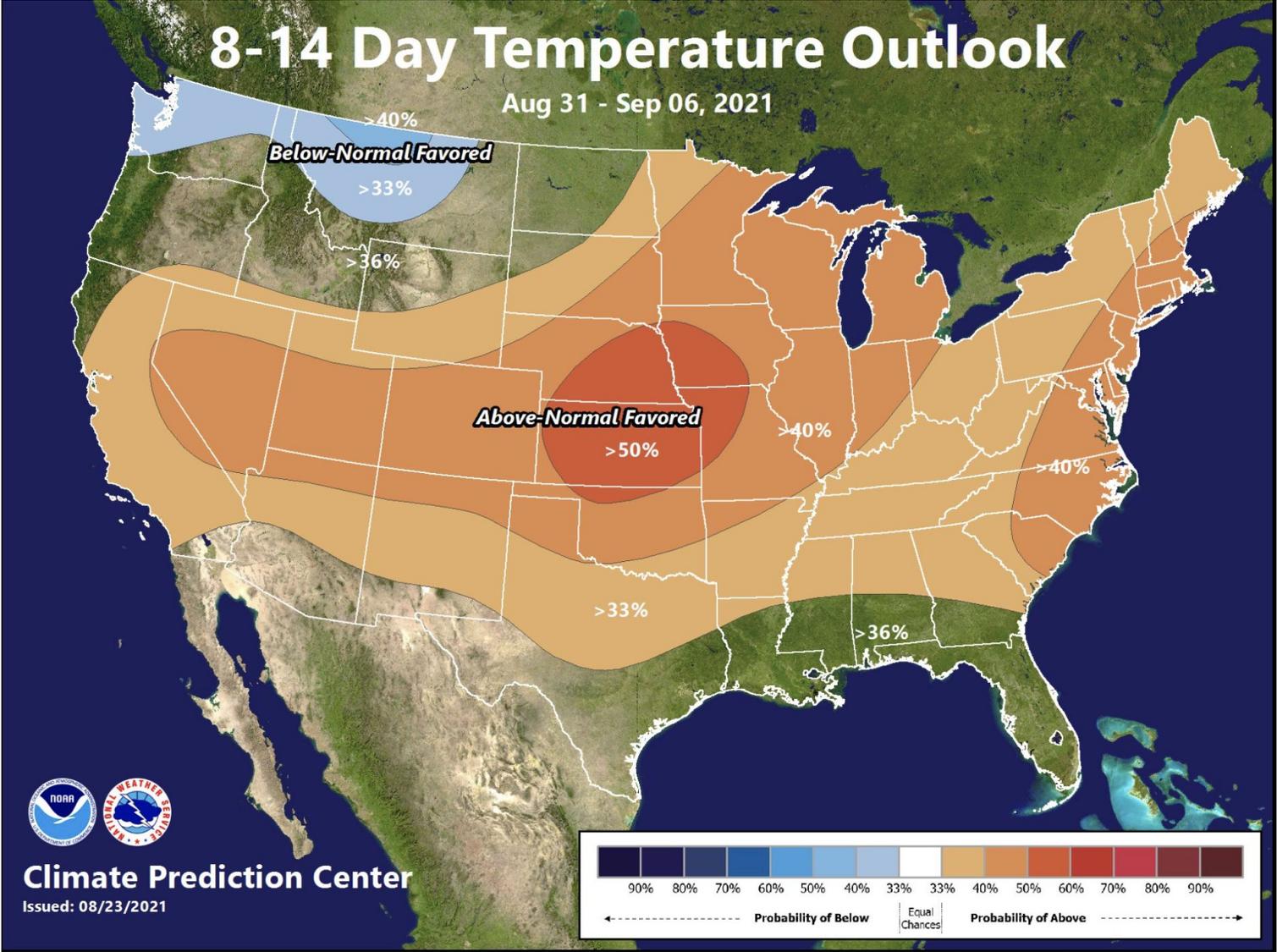
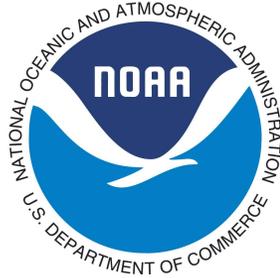
Presenter - Glen Merrill

Weather Prediction Center U.S. Day 3-7 Hazards Outlook



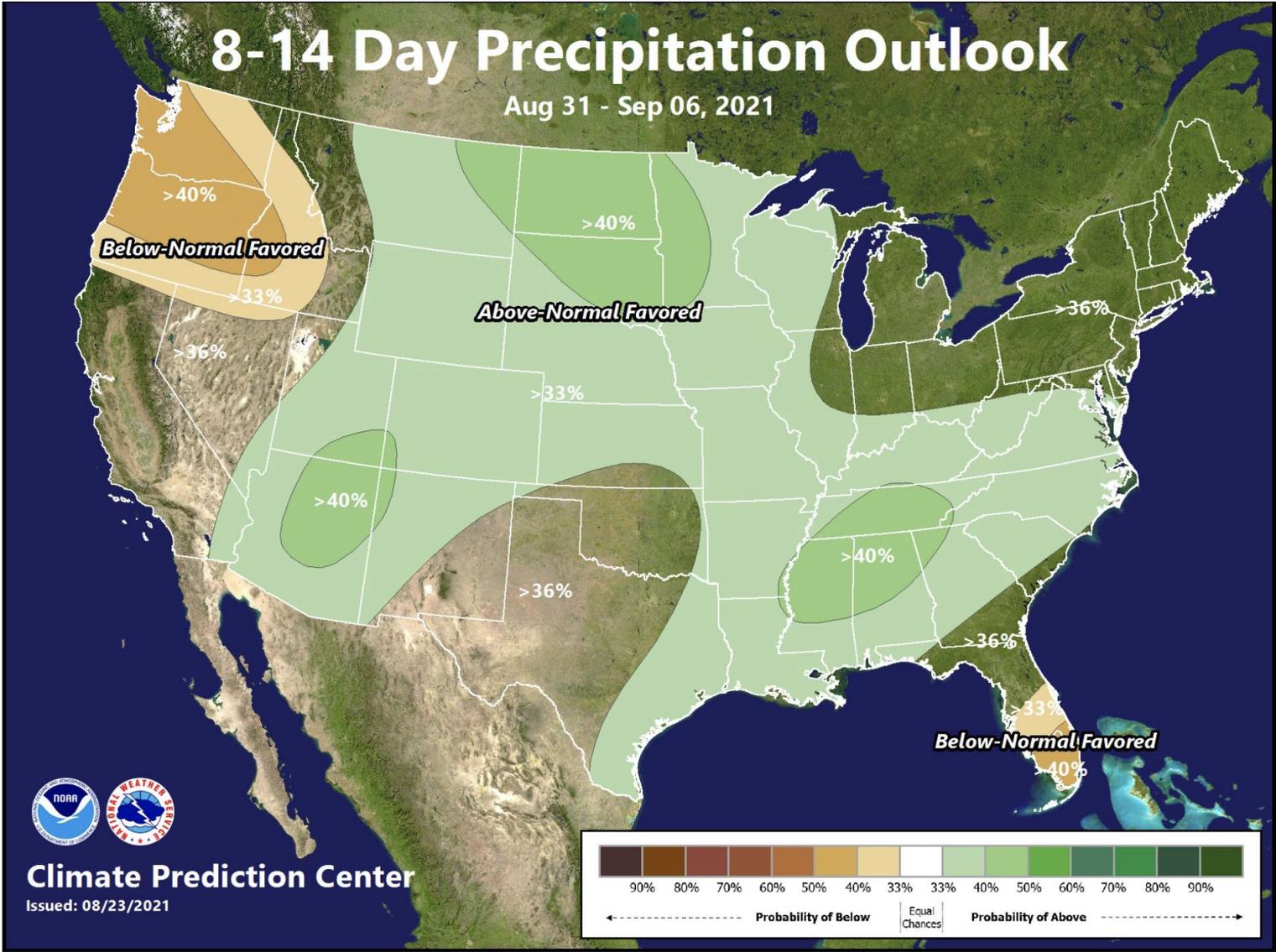
Agency - National Weather Service Weather Forecast Office
Presenter - Glen Merrill

Climate Prediction Center 8 to 14 Day Outlooks - Temperature



Agency - National Weather Service Weather Forecast Office
Presenter - Glen Merrill

Climate Prediction Center 8 to 14 Day Outlooks - Precipitation



Agency - National Weather Service Weather Forecast Office
Presenter - Glen Merrill

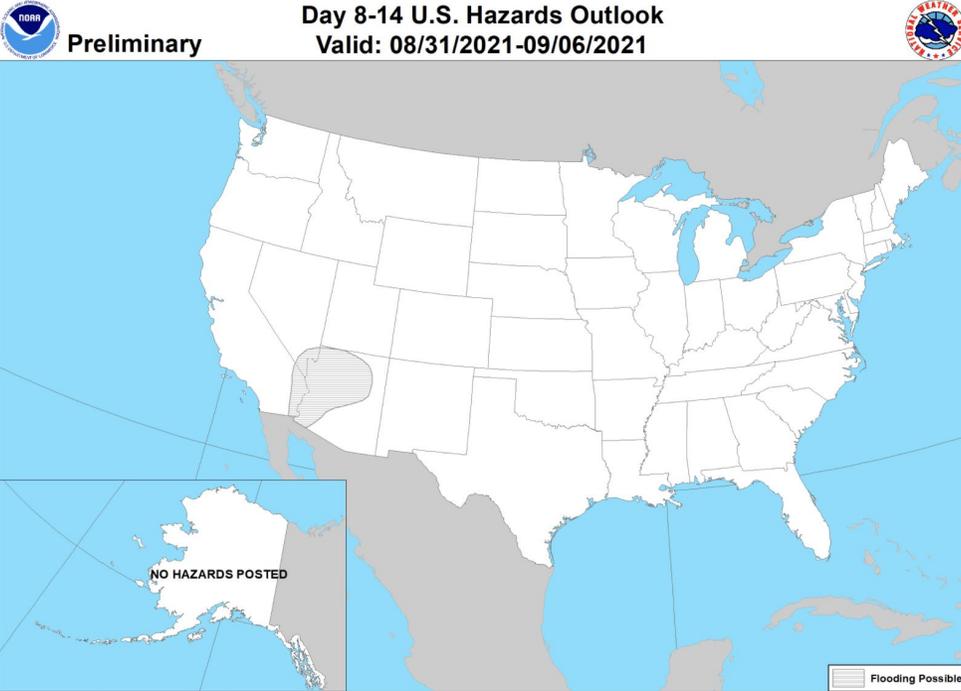
Climate Prediction Center U.S. Week-2 Hazards Outlook



Much Above Normal Temperatures	Excessive Heat	Heavy Precipitation	Composite
High Risk	High Risk	High Risk	Floding Possible
Moderate Risk	Moderate Risk	Moderate Risk	Frozen Precipitation
Slight Risk	Slight Risk	Slight Risk	
Much Below Normal Temperatures	High Winds	Heavy Snow	
High Risk	Moderate Risk	High Risk	
Moderate Risk	Slight Risk	Moderate Risk	
Slight Risk		Slight Risk	

Composite Map |
 Day 8-14 |
 Experimental Probabilistic Outlooks

Temperature Hazards |
 Precipitation Hazards |
 Wind Hazards |
 Snow Hazards



Climate Prediction Center
 Made: 08/23/2021 3PM EDT

Follow us: www.cpc.ncep.noaa.gov

Agency - National Weather Service Weather Forecast Office
 Presenter -

Water Supply Forecasts

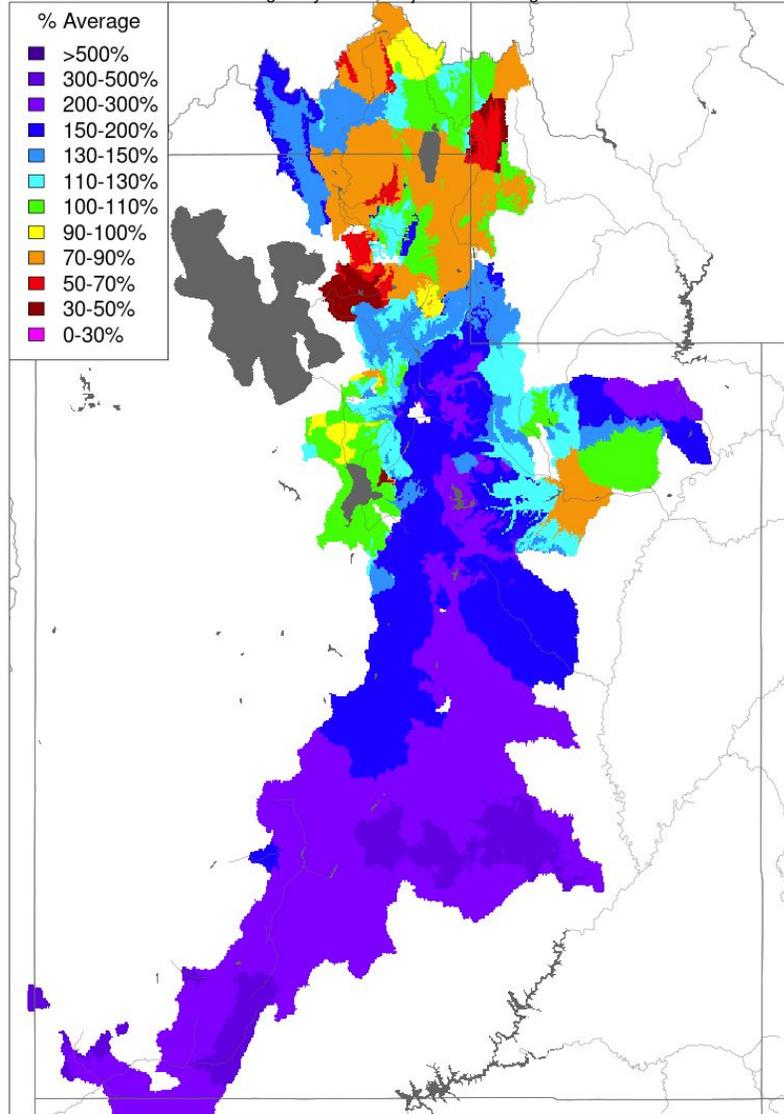


Final Volumes 2021

Weber Gateway	18%
Bear UT/WY	49%
Six Creeks LCC	51%
Utah Lake	35%
Sevier Hatch	28%
Green River UT	32%
San Juan Bluff	45%
Lake Powell	26%

Monthly Precipitation - July 2021

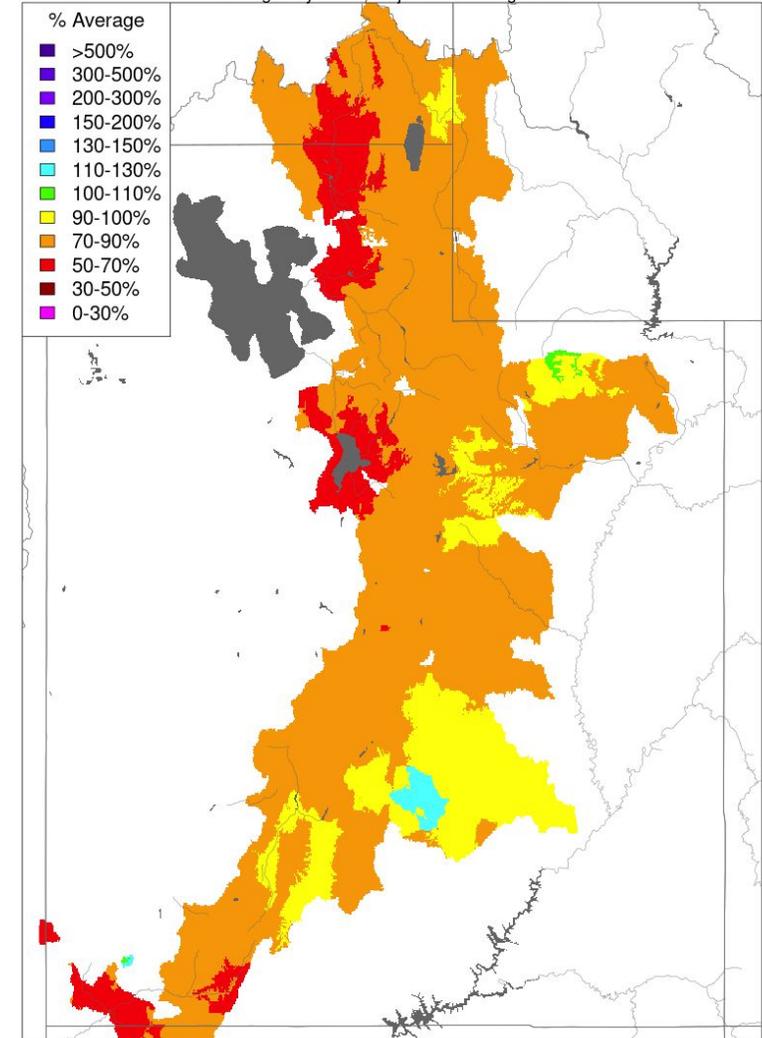
Averaged by Basin, Major Contributing Areas



Prepared by NOAA, Colorado Basin River Forecast Center
Salt Lake City, Utah, www.cbrfc.noaa.gov

Seasonal to Date Precipitation, October 01 - August 24 2021

Averaged by Basin, Major Contributing Areas

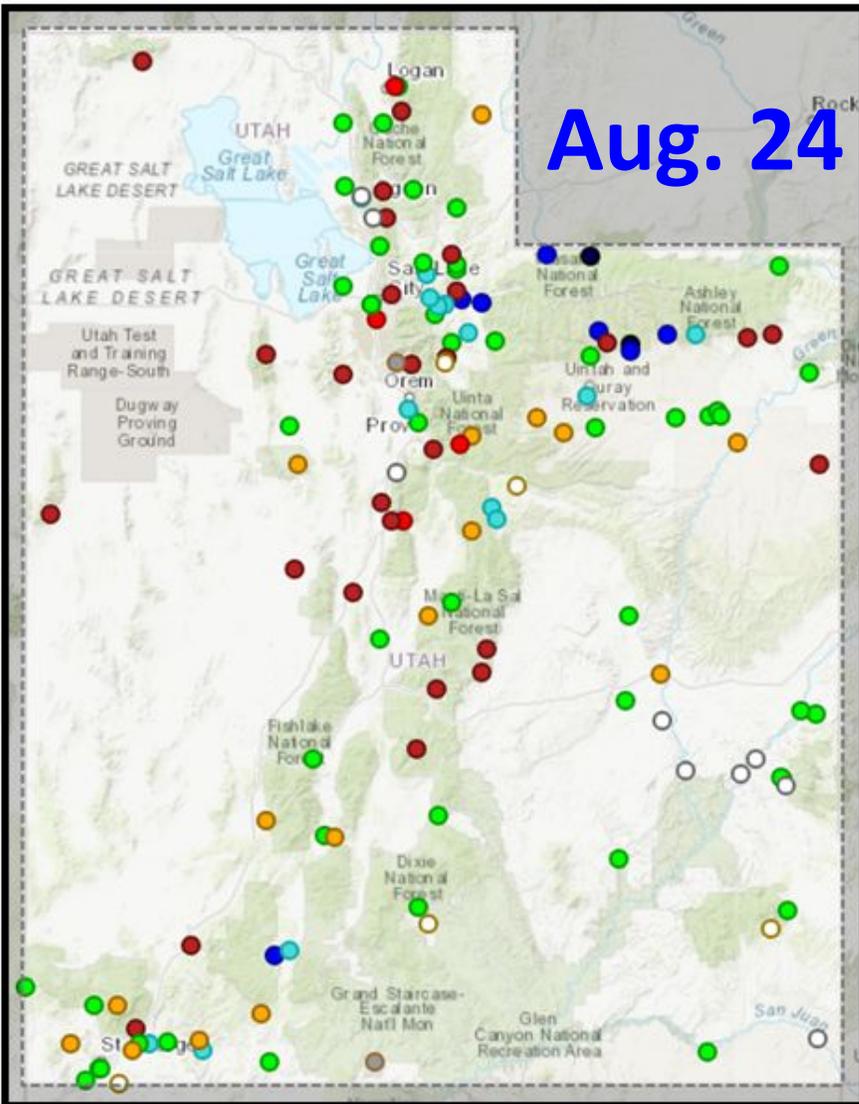


Prepared by NOAA, Colorado Basin River Forecast Center
Salt Lake City, Utah, www.cbrfc.noaa.gov

Agency - CBRFC

Presenter - Brent Bernard

Current Streamflow Conditions



Aug. 24

Streamflow: Status

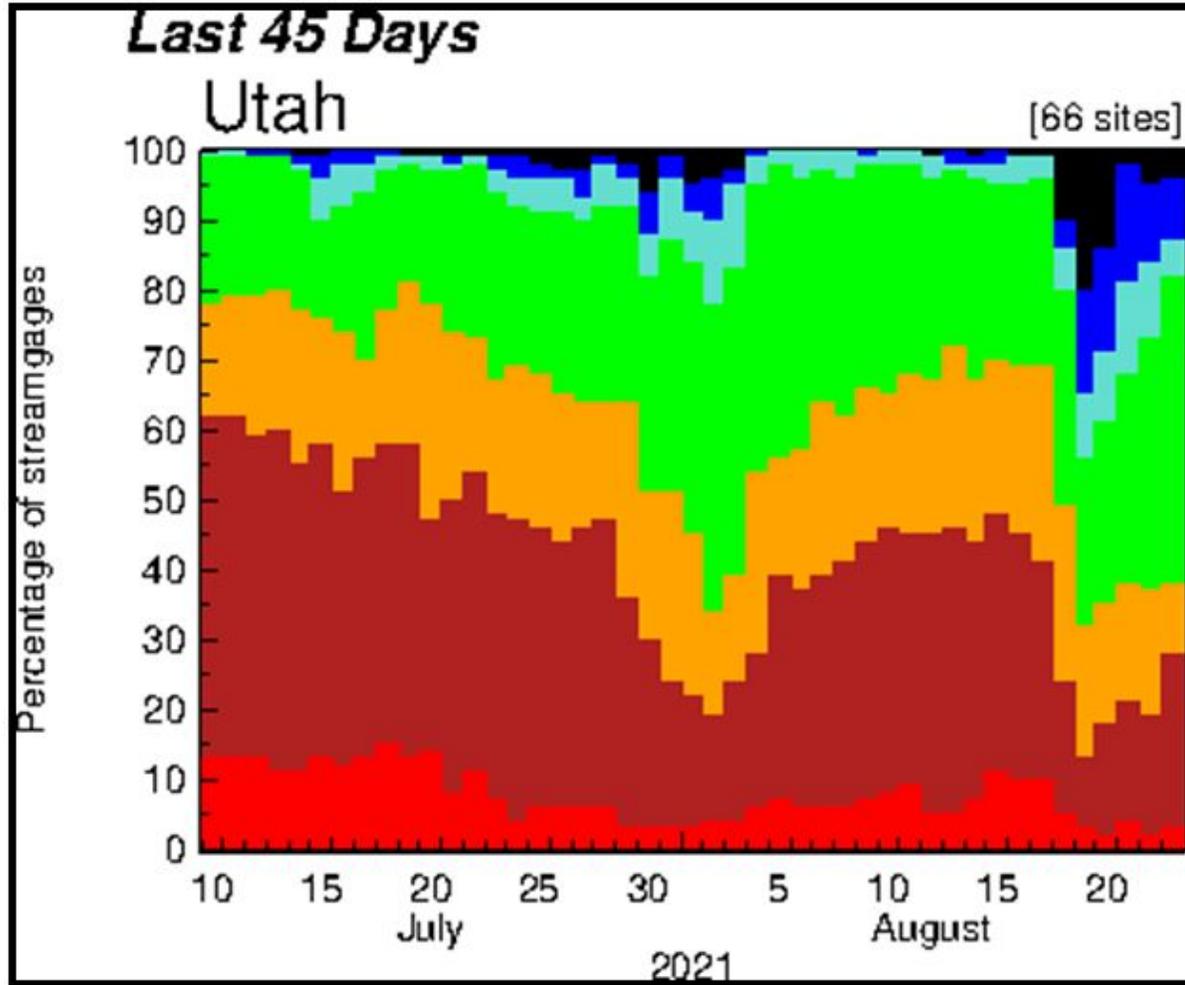
- Above flood stage
- All-time high for this day (100th percentile (maximum))
- Much above normal (>90th percentile)
- Above normal (76th – 90th percentile)
- Normal (25th – 75th percentile)
- Below normal (10th – 24th percentile)
- Much below normal (<10th percentile)
- All-time low for this day (0th percentile (minimum))
- Not flowing
- Not ranked
- Measurement flag
- Recent measurement unavailable

Day-of-Year Status	# Gages	% Gages
All-time high for this day-of-year	2	1.5%
Much above normal for this day-of-year	7	5.1%
Above normal for this day-of-year	14	10.3%
Normal for this day-of-year	50	36.8%
Below normal for this day-of-year	16	11.8%
Much below normal for this day-of-year	27	19.9%
All-time low for this day-of-year	4	2.9%
Not ranked - insufficient record	10	7.4%
Not ranked - stream not flowing	5	3.7%
Not ranked - no measurement	1	0.7%

Sites must have at least 10 years of streamflow record

Agency - USGS Utah Water Science Center
 Presenter - Ryan Rowland

Current Streamflow Conditions



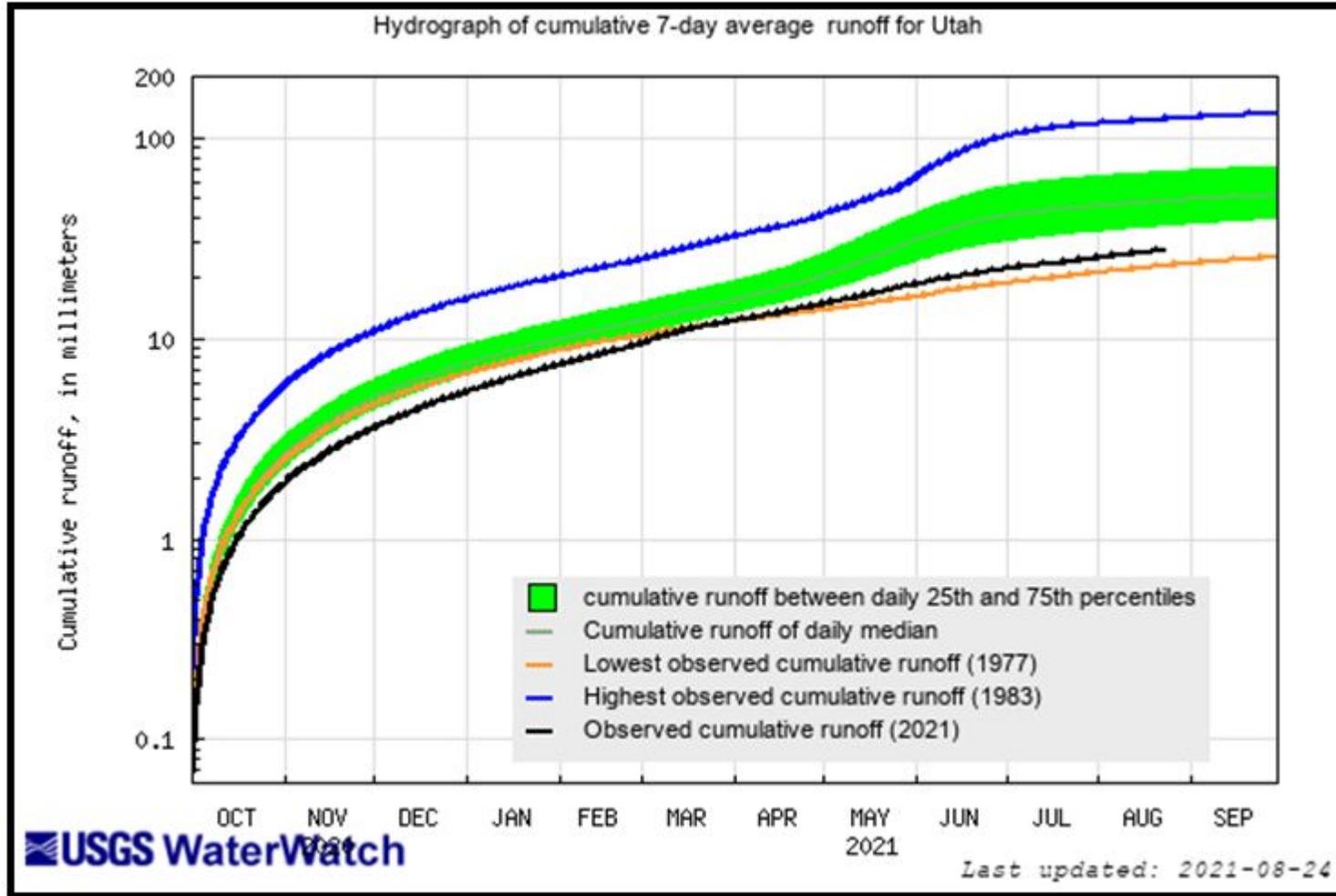
Explanation - Percentile classes							
Low	<10	10-24	25-75	76-90	>90	High	No Data
	Much below normal	Below normal	Normal	Above normal	Much above normal		

- Streamflow compared to historical streamflow for the day of the year
- Sites must have at least 30 years of record to be included in this graphic

Agency - USGS Utah Water Science Center

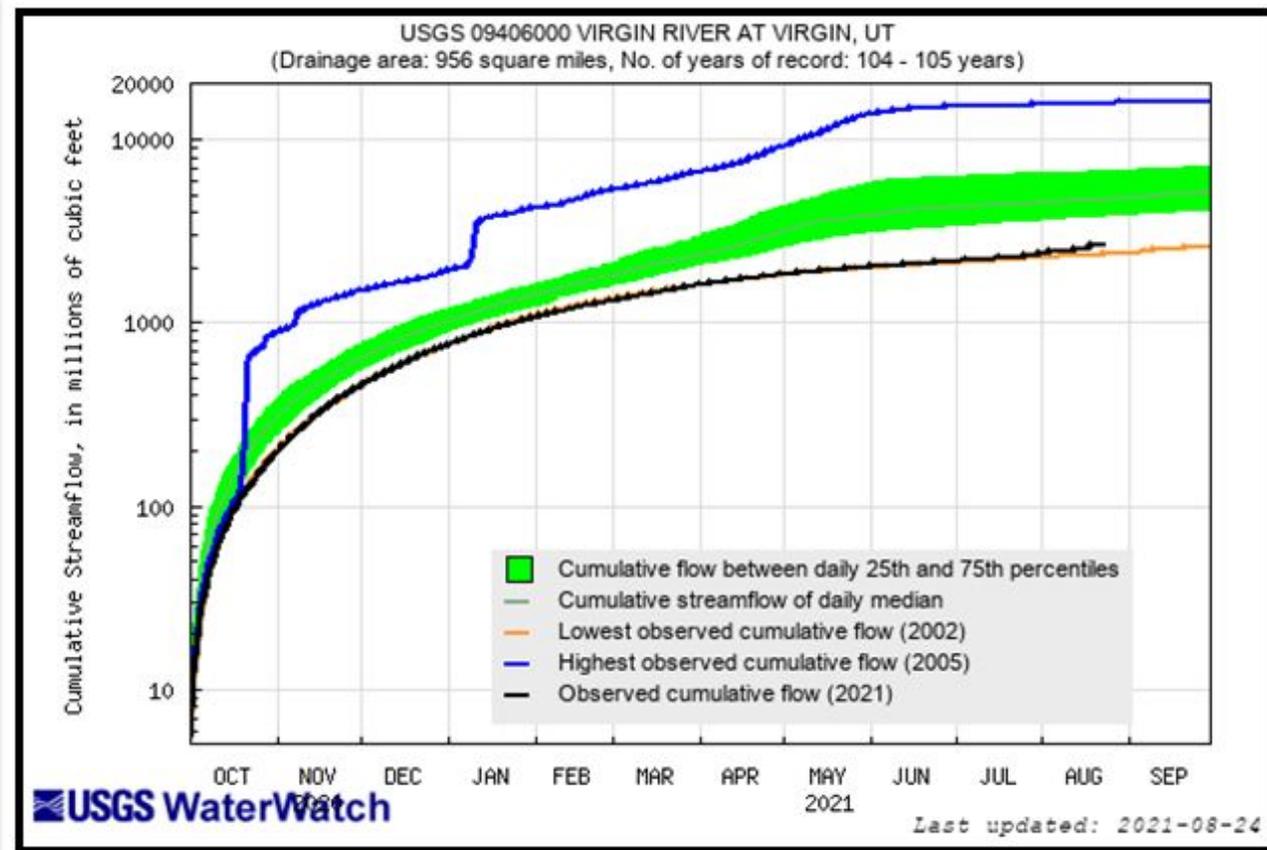
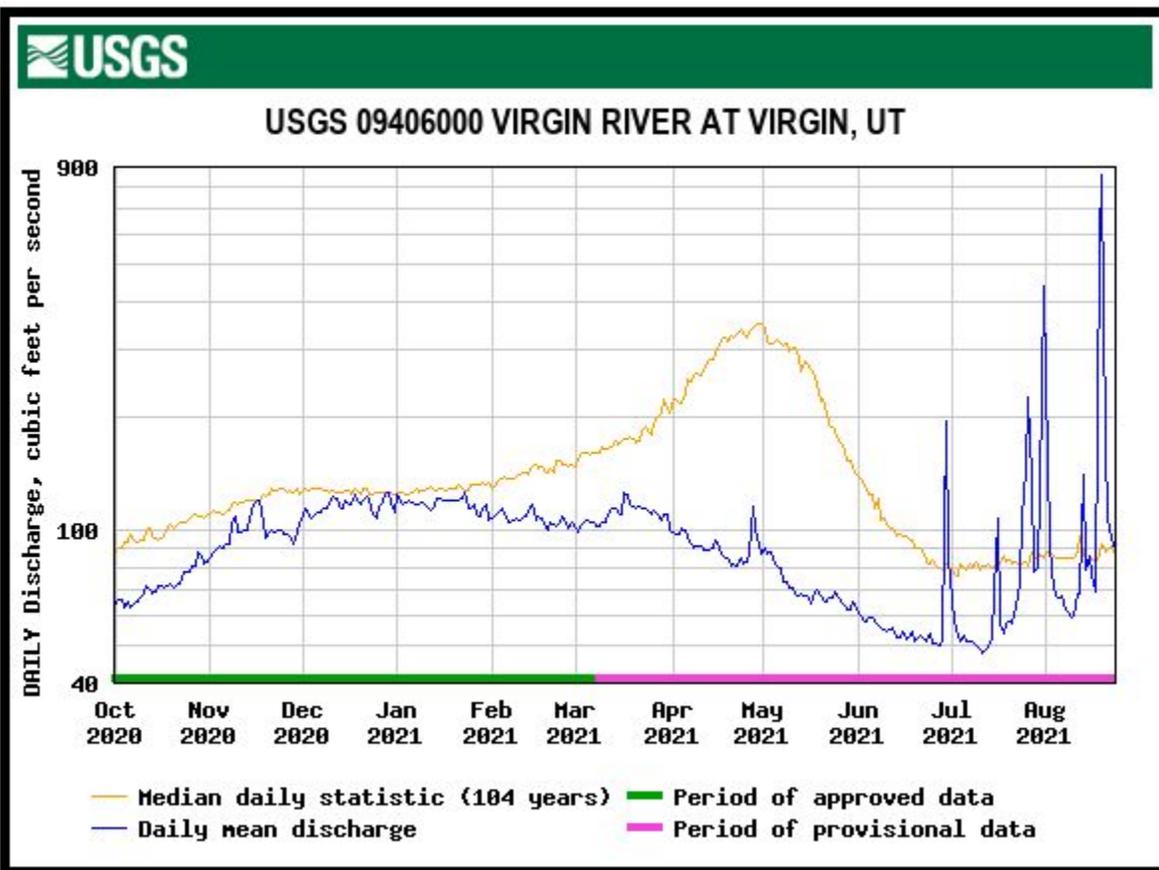
Presenter - Ryan Rowland

Cumulative Streamflow

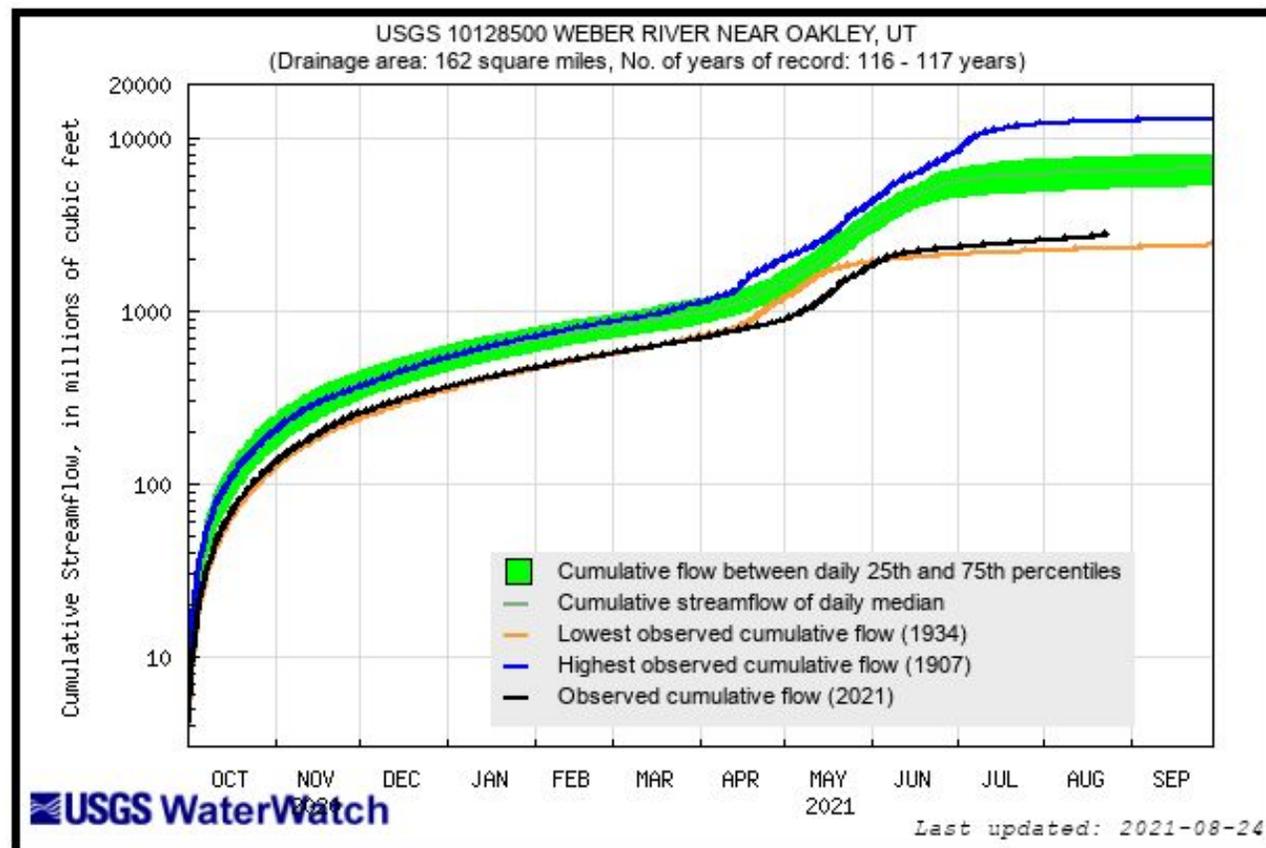
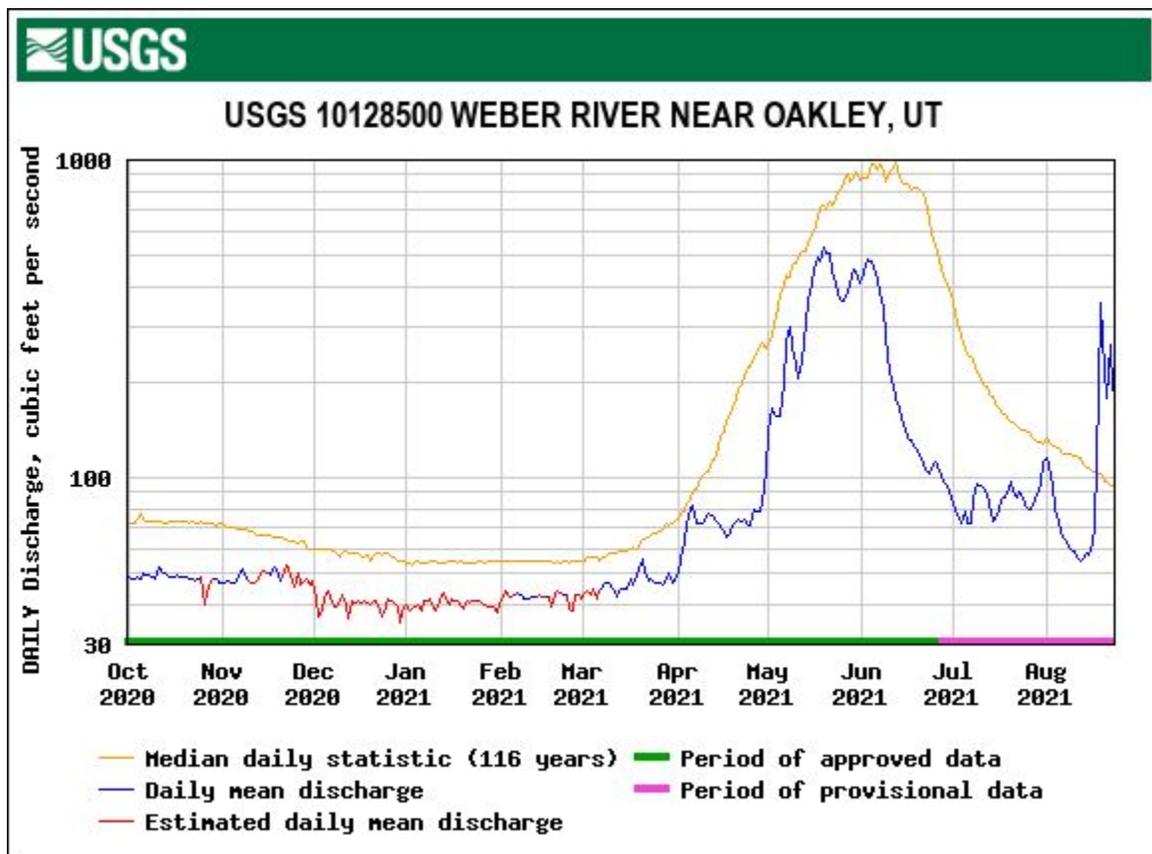


□ Cumulative 7-day average runoff for water year 2021 is near the lowest on record

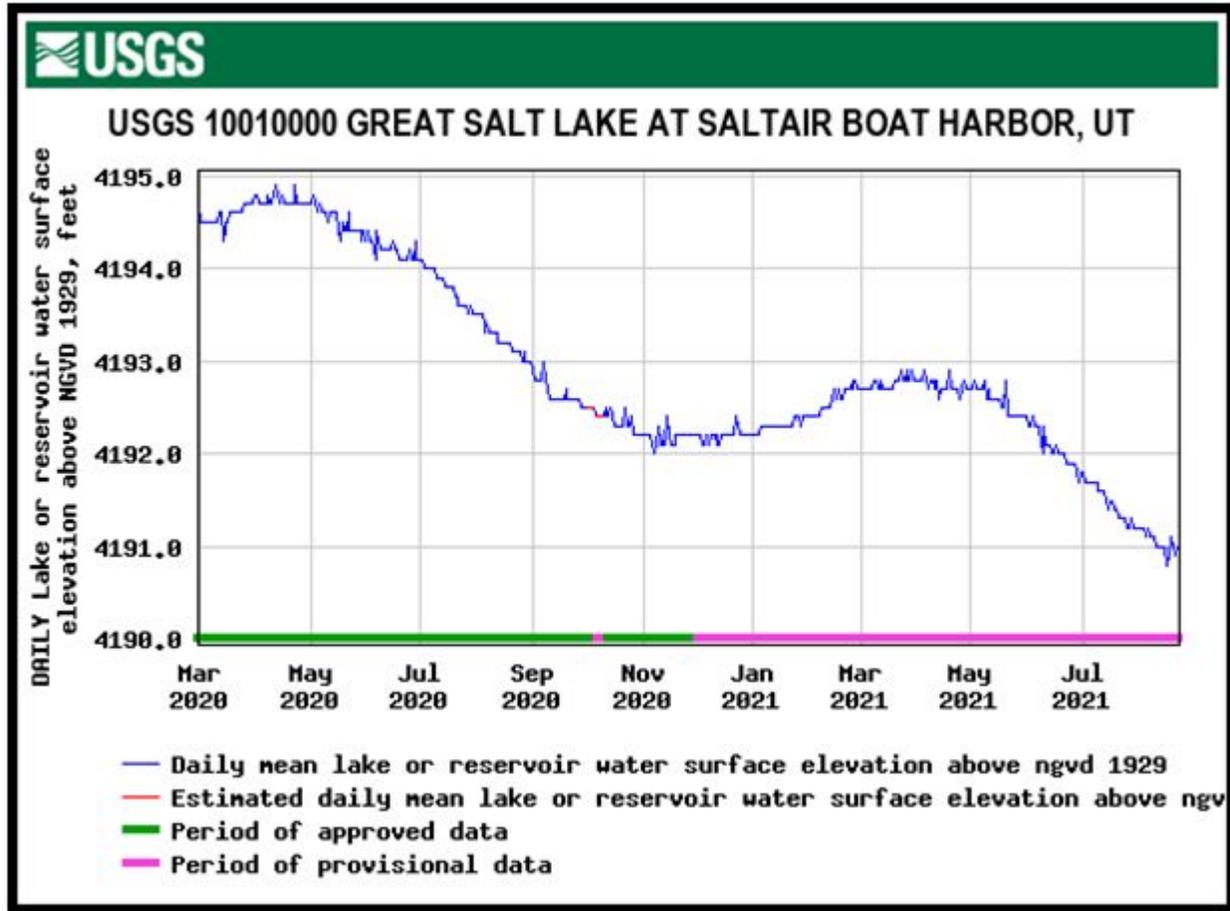
Daily vs Cumulative Streamflows



Daily vs Cumulative Streamflows

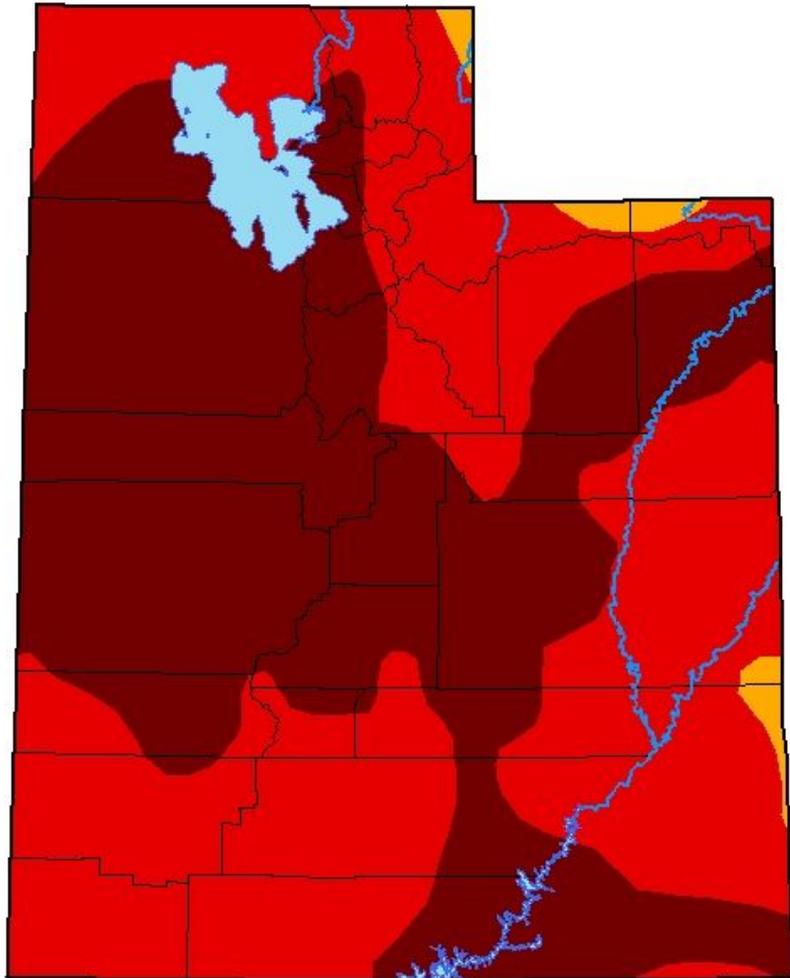


Great Salt Lake Water Surface Elevation



- ❑ Daily mean value yesterday 4,190.9'
- ❑ Broke historic low record on 7/21/2021 when daily mean value = 4,191.3'
- ❑ Site has data record dating back to 1847

U.S. Drought Monitor Utah



August 17, 2021
(Released Thursday, Aug. 19, 2021)
Valid 8 a.m. EDT

Intensity:

-  None
-  D0 Abnormally Dry
-  D1 Moderate Drought
-  D2 Severe Drought
-  D3 Extreme Drought
-  D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to <https://droughtmonitor.unl.edu/About.aspx>

Author:

Curtis Riganti
National Drought Mitigation Center

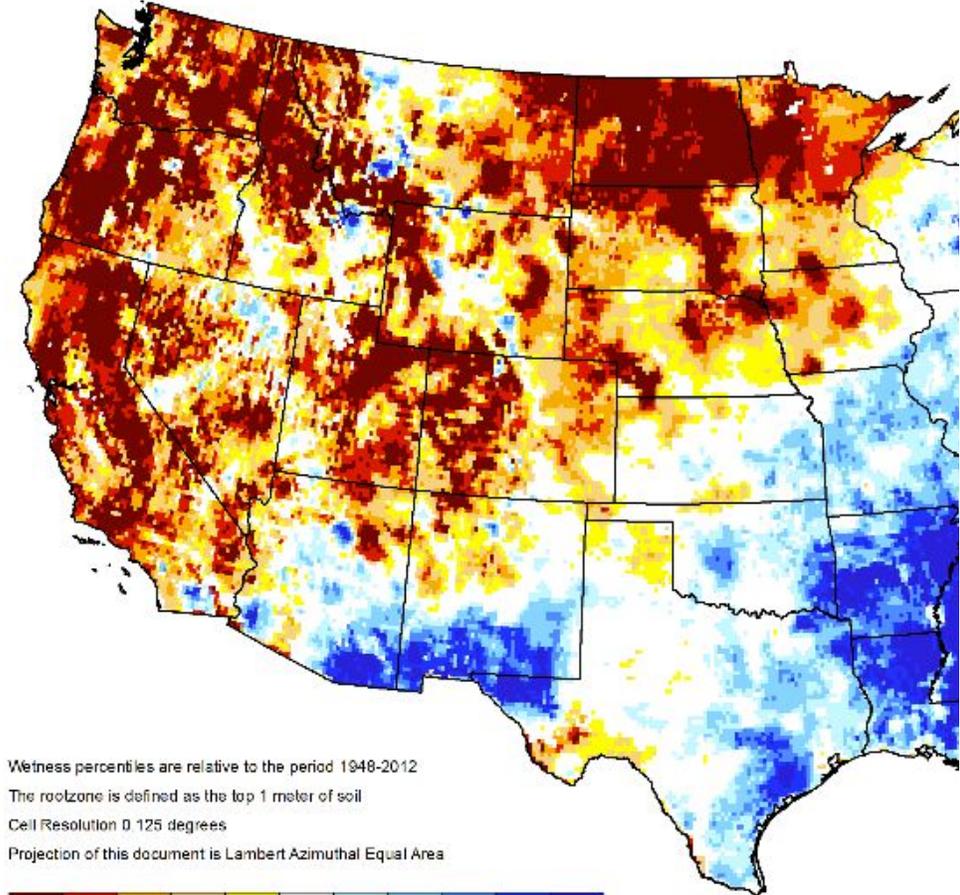


droughtmonitor.unl.edu



GRACE-Based Root Zone Soil Moisture

August 16, 2021



Wetness percentiles are relative to the period 1948-2012

The rootzone is defined as the top 1 meter of soil

Cell Resolution 0.125 degrees

Projection of this document is Lambert Azimuthal Equal Area



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